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**University Programs of the**
**U.S. Advanced Accelerator Applications Project**

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The Advanced Accelerator Applications (AAA) Program was initiated in fiscal year 2001 (FY01) by the U.S. Congress, the U.S. Department of Energy (DOE), and the Los Alamos National Laboratory (LANL) in partnership with other national laboratories. The primary goal of this program is to investigate the feasibility of accelerator-driven transmutation of nuclear waste (ATW). Because a large cadre of educated scientists and trained technicians will be needed to conduct the investigations of science and technology for transmutation, the AAA Program Office has begun a multi-year program to involve university faculty and students in various phases of the Project.

In this presentation I describe the rapidly expanding university programs of the AAA Project. Previous work includes research and fellowship programs of the ATW and AAA Projects. This year the Department of Energy and the laboratories are expanding these programs by more than 75 percent, and in future years existing programs will be expanded as the AAA Project expands.

Previous research participants included the University of Michigan, the University of California at Berkeley, the University of Texas at Austin, and the University of Nevada Las Vegas. At Berkeley and Michigan, faculty and students have supported technical staff members at national laboratories by conducting studies on a variety of concepts for accelerator-driven transmutation, including liquid-metal-cooled and gas-cooled systems as well as molten-salt systems. Work at Michigan also supports plans for experiments at facilities such as the Los Alamos Neutron Science Center (LANSCE) and reactors at Argonne National Laboratory-West. Faculty and students at UT-Austin have been developing methods to compare the proliferation resistance of various fuel cycle scenarios. In addition, last year ten outstanding students were selected to begin their graduate studies at nine universities as AAA Fellows, and three of those Fellows spent the summer as laboratory interns at Los Alamos and Argonne-West. The new program at Nevada-Las Vegas has already resulted in the selection of twelve competitive, peer-reviewed projects in three colleges and a research center. Altogether, these university programs have supported more than 80 students at almost 20 U.S. universities during the past year (see Table I for a summary).

Table I.
Summary of 2001 AAA Student Support

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| 87 | Total students supported by FY-01 AAA Project funds |
| 20 | Interns at National Laboratories (does not include 3 of the AAA Fellows) |
| 10 | Fellows, AAA University Fellowship Program |
| 40 | UNLV AAA University Participation Program |
| 12 | Directed University Research Programs (Berkeley, Michigan, Texas) |
| 5 | Seaborg Transactinium Science Institute Summer School (Lawrence Livermore) |

With more than $7 M for university participation in the AAA Project in FY02, this year we will continue existing programs and add to them. Los Alamos National Laboratory is continuing to sponsor research at Berkeley, Michigan, and Texas at approximately the current level. Growth includes an expanded program at UNLV, the selection of another ten Fellows to begin their graduate studies, and the addition of a major accelerator-based research program at the Idaho Accelerator Center (Idaho State University). AAA laboratories may add directed research projects at several other universities as well.

Future projects that will be described in light of projected long-term and large budgets include expansion of these existing programs as well as a major, competitive, peer-reviewed University Research Program (AAA URP) that could be initiated in FY03. The AAA URP will include faculty-centered R&D in support of the AAA Project.